

REMARKS

Claims 1-15 and 17-19 are pending for examination. Claims 1, 4-6 and 19 have been amended. Favorable reconsideration and allowance of this application is respectfully requested in light of the amendment and the foregoing remarks. No new matter has been added.

Information Disclosure Statement

A supplemental IDS is filed herewith. The IDS includes references found in a corresponding EP application that has issued as EP1567403.

Rejection of Claims under 35 U.S.C. §103

Claims 1, 4 and 19 were rejected under 35 U.S.C. §103 as obvious by U.S. Patent No. 3,939,933 to Armstrong in view of US Patent No 4,820,480 to David.

Claim 1 recites a hydraulic steering device for centre pivot steered vehicles with an centre pivot joint between major ground-engaging components of the vehicles. The device includes at least one hydraulic swiveling vane motor for producing the steering. The swiveling vane motor in the form of a centre pivot steering joint of the centre point-steered vehicle or is arranged in the rotary axis of the centre point steering joint of the vehicle.

Armstrong shows a transmission control system having a hydraulic pump in communication with a hydraulically operated ram incorporated above an articulation

joint. While Armstrong discloses the invention as applied to a hydraulically operated ram, it also notes it could be applied to vane motor or other hydraulic steering device. It however does not disclose the positioning or configuration of the vane motor. Specifically, Armstrong does not recite the positioning of the swiveling vane motor in the form of a centre pivot steering joint of the centre point-steered vehicle or is arranged in the rotary axis of the centre point steering joint of the vehicle.

David shows an external combustion engine having a rotary vane motor having multiple vanes. It does not show the positioning of the swiveling vane motor in the form of a centre pivot steering joint of the centre point-steered vehicle or is arranged in the rotary axis of the centre point steering joint of the vehicle.

As neither reference alone or in combination appears to show all of the elements of claim 1 removal of this rejection is requested. Claims 4 and 19 depend from claim 1 and should be allowable for at least the same reasons.

Claim 4-6 are separately patentable as they discuss the use of additional motors arranged above or below the joint along the rotary axis. This configuration increases the possible steering torque or reduces the size of the individual swiveling motors. As the maximum steering torque results from the total volumes of all the motors working together, thus an optimum ratio of size to the possible steering torque is achieved. Armstrong and David do not show any vane motor configuration using multiple motors, particularly in an arrangement along the rotary axis of the vehicle.

Claim 19 is further patentable as it the swiveling motor is positioned in the joint such that a connecting section of a first ground engaging portion of a vehicle

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runs through the swiveling motor and bearing points of the swiveling motor form a turning bearing between the first and a connecting section of a second ground engaging component of the vehicle. Neither Armstrong nor David show the swiveling motor forming the joint of a centre-pivot vehicle as recited.

Claims 2 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Armstrong in view of David and US patent 6, 719,377 to Zimmerman.

Claims 2 and 5 are dependent on claim 1 and should be allowable for at least the same reasons as claim 1.

Claims 3, 6-8, 10, 11 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Armstrong in view of David and US Patent Publication 2003/0013575 to Sprinkle.

Claims 3, 6-8, 10, 11 and 16 are dependent on claim 1 and should be allowable for at least the same reasons.

Claim 9 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Armstrong in view of David, Zimmerman and in further view of Sprinkle.

Claims 9 and 10 are dependent on claim 1 and should be allowable for at least the same reasons as claim 1.

Claims 12 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Armstrong in view of David, Sprinkle and US Patent to Sakamoto 5,584,346.

Claims 12 and 14 are dependent on claim 1 and should be allowable for at least the same reasons as claim 1.

Claims 12 is further patentable as the references do not disclose using a joystick to control the movement of a swiveling vane motor for steering a vehicle. They instead discuss using the joystick connected to said electronic control element for contracting and expanding a steering cylinder but do disclose the use of a joystick in controlling a swiveling motor as related to the direction of a vehicle.

Claim 13 is further patentable as none of the references disclose the use of a joystick with a force feedback function. The Sakamoto reference as discussed by the examiner only appears to show using a joystick, with a return to neutral function, for setting the target blade tilt angle. It does not show any use of force feedback that transmits forces felt in actual operations relating to the steering of the vehicle.

Claims 17 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Armstrong in view of David, Sprinkle and further in view of US Patent Publication 2002/0170769 to Sakaki.

Claims 17 and 18 are dependent on claim 1 and should be allowable for at least the same reasons as claim 1.

Conclusion

Applicants respectfully submit that claims 1-15 and 17-19 define patentable subject matter. A Notice of Allowance is therefore respectfully requested.

Examiner is authorized to direct payment of the fee for an extension of time, or credit any overpayment to Deposit Account No. 14-0780. The Examiner is invited to contact the undersigned by telephone if it would help expedite matters.

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